

Applicant : Laurence E. Allen III
Serial No. : 10/775,613
Filed : February 9, 2004
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Attorney's Docket No.: 10887-009002

REMARKS

In reply to the Office Action of December 2, 2004, Applicant submits the following remarks. Claims 1 and 19 have been amended. Claims 12 and 27 have been cancelled. Claims 28-31 are new. No new matter has been added. Claims 1-11, 13-26 and 28-31 are now pending after entry of this amendment. Applicant respectfully requests reconsideration in view of the foregoing amendments and these remarks.

Amendment of Specification

The applicant has corrected the spelling of "microns" on page 14, line 4 of the specification. Two paragraphs on page 20 have been amended to correct typographical errors.

Allowable Subject Matter

Claim 12 was objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Claim 12 depended from claim 1. The subject matter of claim 12 has been incorporated into claim 1 and claim 12 has been cancelled. The applicant submits that claim 1 is now in condition for allowance.

Claims 21, 22, 24 and 25 were also objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. The applicant thanks the Examiner for finding the subject matter of claims 21, 22, 24 and 25 allowable.

Section 102 Rejections

Claims 1-11 and 13-18 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. 5,819,945 ("Laskowski"). The applicant respectfully disagrees.

As described above, claim 1 has been amended to incorporate the allowable subject matter of claim 12. The applicant believes that claim 1 and the claims that depend from claim 1, claims 2-11 and 13-18 are now allowable over Laskowski.

Claims 19, 20, 23 and 26 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. 5,794,791 ("Kindig"). The applicant respectfully disagrees.

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Amended claim 19 is directed to a method for separating a mixture. A mixture is separated in a first density separator to generate a first fraction and a second fraction. The first fraction is separated in a second density separator to generate a third fraction. Liquid is recovered from the third fraction. The recovered liquid and the second fraction are combined. The combined liquid and second fraction are separated in a third density separator. Each of the separations steps is performed in a different density separators.

Kindig describes processing coal through use of a dense medium separation process to produce clean high quality coal (col. 7, lines 60-66). Coal feed 1 is separated by a gravity separation unit 5, a low density separation unit 8, a classifying cyclone 21, and dense medium cyclones 25, 33 (FIGS. 1A and 1B, col. 17, lines 65-67, col. 18, lines 1-67). Kindig also describes draining and rinsing separated particles (col. 15, lines 17-64). The cleaner process water from a separation step later in a sequence of processing steps is used to rinse coal in an early separation step in the sequence (*id.*). In particular, Kindig describes a process where process water 23, 40, 52, 72, a mixture of water and magnetite 12, or water 48 is added to particles prior to performing a process step (FIGS. 1A and 1B, col. 18, lines 13-67, col. 19, lines 1-16).

Kindig describes cleaning and separating particles in multi-step process using separators, such as gravity separators and cyclones, to form separation products. Kindig also describes adding water to a separation product before continuing to process the separation product. Recycled water from a cleaner, or later, separating step can be added as the process water in an earlier process step. However, in many cases, Kindig notes that process water is added to the separation products without stating the specific source of the process water, i.e., from which step the process water is derived (items 23, 40, 52, 72, FIGS. 1A and 1B). Where the source of the water is specifically shown (items 12 and 48), the water is not recovered from a third separation fraction and added to a second separation fraction to be separated in a third density separator, i.e., where a mixture is separated into first and second separation products in a first density separator, the first separation product is separated into the third separation product in a second density separator and the three separations are performed in different separators, as claimed. For

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at least this reason, the applicant submits that claim 19 is not anticipated by Kindig. Claim 20 depends from claim 19 and is similarly not anticipated by Kindig.

Claim 23 is directed to a system for separating a mixture of particles. The system has a first density separator and a second density separator fed by a first exit port of the first density separator. A third density separator is fed by the second exit port of the first density separator. A dewatering screener is coupled to an exit port of the second density separator and is configured to remove liquid from a product exiting the exit port of the second density separator, such that at least a portion of the removed liquid is fed into the third density separator.

Kindig describes a dewatering unit 56 where clean coal 64 is centrifuged (FIGS. 1A and 1B, col. 18, lines 37-41). Water is also removed from various stages of the coal cleaning process, such as in the thickener 13 and magnetic separation units (col. 18, 13-17, col. 19, lines 12-16). Screens are used at a sizing step 2 and a rinsing step 39 (col. 17, lines 65-67, col. 18, lines 61-65).

Kindig describes a dewatering unit and units the remove water from coal. However, Kindig does not describe a second density separator fed by a first exit port of a first density separator and a third density separator fed by a second exit port of the first density separator and a dewatering screener that is coupled to an exit port of a second density separator and is configured to remove liquid from a product exiting the exit port of the second density separator, such that at least a portion of the removed liquid is fed into a third density separator.

Claim 26 depends from claim 23 and recites that the separation system includes a single pump operably coupled to the first, second and third density separators.

Kindig shows a multistep separator with three classifying cyclones 134, 146, 162 and three cyclone sumps and pumps 116, 130, 140, 142, 152, 154. Kindig does not show a single pump that is coupled to first, second and third density separators. Rather, Kindig shows each cyclone as having an associated pump. Claim 26 recites a single pump that is operably coupled to the first, second and third density separators. In addition to the reasons provided above with respect to claim 23, the applicant submits that claim 26 is not anticipated by Kindig.

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Additional Claims

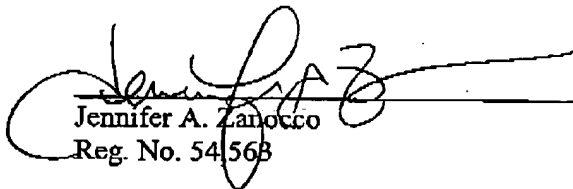
Claims 28-31 are new. No new matter has been added.

Please apply excess claims fees of \$50.00 and any additional required charges or credits to deposit account 06-1050.

Respectfully submitted,

Date:

March 2, 2005


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